

7.19

## **STANDARD OPERATING PROCEDURES FOR THE COLLECTION OF SEDIMENT SAMPLES**

### **Summary**

The chemical characterization of sediments can be an important indicator of toxic contamination. Sediments, by their nature can become the repository of years of pollutant accumulations. Sediment samples are analyzed for major organic contaminants (i.e., PCBs, pesticides) and trace elements including mercury.

In general, the sediment sample consists of the top 6 inches of undisturbed sediments. This is accomplished by using a core sampler like the "K-B" 2-inch core sampler. In some cases where the sub-strait is composed of fine sands or gravels a petite ponar dredge or stainless steel spoon or shovel will need to be employed. Which ever sampling device is used the sample should be approximately 1000 ml in size and composed of equal amounts of the upper 6 inches of sediments.

The sample will be placed in a sterile glass container with a Teflon lid with an identifying label attached to the container.

### **Equipment and Supplies**

- ☐ Bathymetric lake map
- ☐ Hydrographic lake map
- ☐ "K-B" 2-inch core sampler with 100 feet of cable and messenger
- ☐ Clean 20-inch CAB plastic liner tubes with eggshell core catcher
- ☐ Stainless steel spoon
- ☐ Clear plastic tape
- ☐ Sample containers (Qorpak, EPA Clean, 16 oz. glass jars with teflon-lined cap)
- ☐ Sample labels
- ☐ Sample custody report forms
- ☐ Field report form
- ☐ Sample log form
- ☐ Pen

## **Procedure**

1. With a map, locate the appropriate sample location.
2. Load a clean plastic liner tube with eggshell catcher in the core sampler.
3. Collect a sample. **Note:** A minimum of six inches of sediment should be collected.
4. Retrieve the sampler and decant excess water in tube. This is accomplished by pulling back the sampler plunger and slowly tilting the sampler in a downward direction.
5. Unscrew the retaining cap and carefully remove the sample tube. As you begin to remove the tube, cap the bottom to prevent the sediment sample from falling out. Transfer top six inches of sediment to Qorpak sample containers.
6. Rinse the tube completely and reload the sample tube into the core sampler.
7. Record sample on Field Log (7.19.01). Place a label (Figure 7.19.03) on the container and place clear plastic tape over the label to prevent deterioration of the label. Fill out the Sample ID/Custody Report completely (Figure 7.19.02).
8. Put the sample in a cooler containing ice.
9. Fill out the field report form and the sample log form. If the sample log indicates a field duplicate sample be collected, repeat steps 3 through 7. **Note:** A field duplicate sample should be identified with STORET number 389999. Be sure to indicate on the label the STORET number, water body name, and location of the sample being duplicated.

[illegible]

**Figure 7.19.01** Sediment Sample Log.



**North Dakota Department of Health**  
**Sample Identification Record**  
**Division of Laboratory Services—Chemistry**  
**Telephone: 701.328.6140**  
**Fax: 701.328.6280**

<b>For Laboratory Use Only</b>	
Lab ID:	
Preservation: Yes <input type="checkbox"/>	Temperature:
Initials:	

<b>Surface Water Sample Identification Code R (Water samples)</b>					
Samples received without this sheet or without all necessary sections fully completed will be rejected and not analyzed.					
<b>Sample Collection/Billing Information</b>					
Account #	Project Code:		Project Description:		
Customer (Name, Address, Phone): SWQMP, Division of Water Quality, Gold Seal Center, 4 <sup>th</sup> Floor					
Date Collected:	Time Collected:		Matrix: Water	Site ID:	
Site Description:					
Alternate ID:			Collected By:		
County Number:	County Name:				
Comment:					
Comment:					
<b>Field Information/Measurements</b>					
Sample Collection Method (Circle One): Grab   DI*   DWI**   0-2 meter column			Depth:	Units:	Discharge:
Conductivity:	pH:	Temp:	Dissolved O <sub>2</sub>	Turbidity:	Stage:
Comment:					
<b>Analysis Requested</b>					
<input type="checkbox"/> 5) SW-Major Cations/Anions	<input type="checkbox"/> 144) SW-Trace Metals-dissolved		<input type="checkbox"/> SW-TOC		
<input type="checkbox"/> 7) SW-Trace Metals	<input type="checkbox"/> 160) SW-Nutrients, Complete-dis		<input type="checkbox"/> SW-DOC		
<input type="checkbox"/> 21) SW-Carbamates	<input type="checkbox"/> 164) SW-Fecal coliform bacteria		<input type="checkbox"/> SW-C-BOD-5day		
<input type="checkbox"/> 23) SW-Acid Herbicides	<input type="checkbox"/> 166) SW-Enterococci(Fecal strep)		<input type="checkbox"/> Other:		
<input type="checkbox"/> 25) SW-Base/Neut. Pest	<input type="checkbox"/> 167) SW-E. coli				
<input type="checkbox"/> 30) SW-Nutrients, Complete					
<input type="checkbox"/> 50) SW-Nutrients, Total P-dis.					
<input type="checkbox"/> 74) SW-PAHs					
<input type="checkbox"/> 84) SW-PCBs					
<input type="checkbox"/> 105) SW-Chlorophyll-a & b	Volume Filtered: _____ mL				
<input type="checkbox"/> 118) SW-TSS					

**Figure 7.19.02** Sample Identification/Custody form.   \* Depth Integrated   \*\* Depth/Width Integrated

Project Code	Project Description
Sample ID	Project Description
Analysis: (DC Code) SW-Analyte Group	
Container:	Preservative
Date: ____ / ____ / ____	Time: ____:____ Depth: ____
Sampler:	

Project Code	Project Description
389999	Duplicate for Site:
Analysis: (DC Code) SW-Analyte Group	
Container:	Preservative
Date: ____ / ____ / ____	Time: ____:____ Depth: ____
Sampler:	

**Figure 7.19.03** Sediment and Sediment Duplicate Label.